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EXAMINER	
DAVIS, CYNTHIA L	

ART UNIT	PAPER NUMBER
2665	

DATE MAILED: 02/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/828,298	MCNAMARA, TOD W.	
	Examiner	Art Unit	
	Cynthia L Davis	2665	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-33 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-33 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 06 April 2001 is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 2, 8, 9, 13-15, 18-21, 23, 25, 26, and 28-31 are rejected under 35 U.S.C. 102(e) as being anticipated by Zendle.

Regarding claim 1, a network comprising: a first subnetwork including a first plurality of nodes interconnected by a first plurality of links, wherein nodes in the first plurality have a first capacity is disclosed in Zendle, figure 7, elements 706. A second subnetwork including a second plurality of nodes interconnected by a second plurality of links, the second capacity being higher than the first capacity wherein nodes in the second plurality have a second capacity is disclosed in Zendle, figure 7, elements 704-n (the subnetwork of hubs would have higher capacity that the other, smaller subnetworks). A third plurality of links between nodes in the first subnetwork and the second subnetwork is disclosed in figure 7, elements 706 (there are a plurality of links between nodes of the first subnetwork and their respective hub in the second).

Regarding claim 2, the capacity of each particular one of the plurality of nodes in the second subnetwork is at least equal to the total capacity of all nodes in the first

subnetwork that connect to that particular node in the second subnetwork is disclosed in Zendle, figure 7, elements 706 and 704-n (each hub can handle all of the traffic that its subnetwork(s) can generate).

Regarding claim 8, the second subnetwork includes a fabric capable of carrying any combination of traffic from the first network is disclosed in Zendle, figure 7, elements 704-n (the backbone network can carry all of the traffic from the subnetworks).

Regarding claim 9, at least a third subnetwork having a plurality of nodes interconnected by a fourth plurality of links, further including a fifth plurality of links between nodes in the third subnetwork and in the second subnetwork, and wherein nodes in the third subnetwork have a third capacity lower than the second capacity is disclosed in Zendle, figure 7, elements 706 (there are many lower-capacity subnetworks connected to the second subnetwork).

Regarding claim 13, at least three further subnetworks each having a plurality of nodes interconnected by a respective plurality of links, further including at least three further pluralities of links respectively between nodes in the three further subnetworks and the second subnetwork, and wherein nodes in the three further subnetworks have a third capacity lower than the second capacity is disclosed in Zendle, figure 7, elements 706 (there are many lower-capacity subnetworks connected to the second subnetwork).

Regarding claim 14, routing logic operative to route signals from any of the nodes in the network to any other nodes in the network via a path that is independent of all other traffic in the network is disclosed in Zendle, column 7, lines 50-53 (disclosing routing capability in the subnetworks).

Regarding claim 15, communication-enabling logic operative to enable communication between any two of the nodes based on the available capacity of those two nodes is disclosed in column 9, lines 14-15 of Zendle (disclosing dynamic bandwidth allocation to subscriber terminals; communication will occur if there is available capacity).

Regarding claim 18, a networking method, comprising: inquiring whether two nodes in the network have sufficient capacity to communicate, and determining whether to allow communication between the two nodes based on results of the step of inquiring but otherwise independent of existing traffic allowed through the network in previous steps of allowing, and allowing communication traffic to pass between nodes in a network based on the step of determining is disclosed in Zendle column 9, lines 14-15 (disclosing dynamic bandwidth allocation to subscriber terminals; communication will occur if there is available capacity).

Regarding claim 19, the step of determining is based only on the results of the step of inquiring is disclosed in Zendle column 9, lines 14-15 (disclosing dynamic bandwidth allocation to subscriber terminals; communication will occur if it is determined that there is available capacity).

Regarding claim 20, a networking method, comprising: providing a first subnetwork including a first plurality of nodes interconnected by a first plurality of links, providing a second subnetwork including a second plurality of nodes interconnected by a second plurality of links, providing a third subnetwork including a third plurality of nodes interconnected by a third plurality of links, providing a plurality of links between

nodes in the first subnetwork and the second subnetwork and a plurality of links between nodes in the second subnetwork and the third subnetwork is disclosed in figure 7 of Zendle (disclosing various subnetworks, elements 706, attached to another subnetwork, elements 704-n, with links between the first and third subnetworks and the second). Inquiring whether a node in the third subnetwork has sufficient capacity to receive a transfer, and determining whether to perform a transfer from a node in the first subnetwork to the node in the third subnetwork based on results of the step of inquiring is disclosed in Zendle column 9, lines 14-15 (disclosing dynamic bandwidth allocation to subscriber terminals; communication will occur among nodes if there is available capacity).

Regarding claim 21, a network comprising: means interconnecting a first area of nodes is disclosed in Zendle, figure 7, element 706 (a first connected subnetwork), means interconnecting a first scale of nodes is disclosed in figure 7, elements 704-n (the nodes are connected together to form a backbone subnetwork) and means interconnecting the first area and the first scale is disclosed in figure 7 (the two subnetworks are connected to each other).

Regarding claim 23, the capacity of each particular one of the plurality of nodes in the second subnetwork is at least equal to the total capacity of all nodes in the first subnetwork that connect to that particular node in the second subnetwork is disclosed in Zendle, figure 7, elements 706 and 704 (the 704 subnetwork nodes have more capacity than their respective connected 706 subnetworks).

Regarding claim 25, means interconnecting a second area of nodes and means interconnecting the second area and the first scale is disclosed in Zendle, figure 7, elements 706 (there are a plurality of subnetworks, i.e., areas of nodes, connected to the scale nodes, elements 704-n).

Regarding claim 26 means interconnecting further areas of nodes and means interconnecting the further areas and the first scale is disclosed in Zendle, figure 7, elements 706 (there are a plurality of subnetworks, i.e., areas of nodes, connected to the scale nodes, elements 704-n).

Regarding claim 28, means for routing signals within the network via a paths that are independent of all other traffic in the network is disclosed in Zendle, column 7, lines 50-53 (disclosing routing capability in the subnetworks).

Regarding claim 29, communication-enabling logic operative to enable communication between any two of the nodes based on the available capacity of those two nodes is disclosed in column 9, lines 14-15 of Zendle (disclosing dynamic bandwidth allocation to subscriber terminals; communication will occur if there is available capacity).

Regarding claim 30, a network interface, comprising: a data structure expressing usage of portions of the capacity for the node is disclosed in column 8, lines 41-45 of Lee (disclosing stored link metrics for a set of interconnected nodes; the delay value indicates the used bandwidth). Communication-enabling logic responsive to requests to establish communication with other nodes, and operative to permit the communication if one of the portions with an adequate capacity for the communication is available is

disclosed in Lee, column 1, lines 13-18 (it is common in the art to establish communication between nodes based on whether determining from the link metrics whether there is sufficient bandwidth to establish the communication).

Regarding claim 31, a network interface, comprising: a plurality of connection ports, and routing logic operative to route signals from any of the nodes in the network to any other nodes in the network via a path that is independent of all other traffic in the network is disclosed in Zendle, column 9, lines 2-5 (the high priority packets are routed instantly to their destination regardless of the other traffic).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 3, 4, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zendle in view of Huang.

Regarding claims 3 and 4, the first subnetwork including a fabric capable of carrying any combination of traffic within the first network without requiring such traffic to enter the second subnetwork is missing from Zendle. However, Huang discloses in the abstract a network consisting of independent subnetworks. It would have been obvious to one skilled in the art at the time of the invention to have the first subnetwork capable of carrying any combination of traffic. The motivation would be to make it independent

of other subnetworks in the larger network, and therefor less susceptible to failures that might occur in the larger network.

Regarding claim 24, the means for interconnecting the first area includes means capable of carrying any combination of traffic without requiring such traffic to enter the scale is missing from Zendle. However, Huang discloses in the abstract a network consisting of independent subnetworks. It would have been obvious to one skilled in the art at the time of the invention to have the first area capable of carrying any combination of traffic. The motivation would be to make it independent of other areas of nodes in the larger network, and therefore less susceptible to failures that might occur in the larger network.

3. Claims 5-7, 10, 17, and 32-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zendle in view of Lee.

Regarding claim 5, the first plurality of links and the first plurality of nodes of the first subnetwork form a mesh topology is missing from Zendle. However, Lee discloses in the abstract a plurality of interconnected subnetworks, and in column 4, line 54, that each subnetwork is a fully-mesh topology. It would have been obvious to one skilled in the art at the time of the invention to have the subnetwork in Zendle form a mesh topology as in Lee. The motivation would be to have the subnetwork fully connected.

Regarding claim 6, the first plurality of links and the first plurality of nodes of the first subnetwork form a mesh topology and wherein the second plurality of links and the second plurality of nodes of the second subnetwork form a mesh topology is missing from Zendle. However, Lee discloses in the abstract a plurality of interconnected

subnetworks, and in column 4, line 54, that each subnetwork is a fully-mesh topology. It would have been obvious to one skilled in the art at the time of the invention to have the subnetworks in Zendle form a mesh topology as in Lee. The motivation would be to have the subnetworks fully connected.

Regarding claim 7, the capacity of the first node includes its worst-case bandwidth and the capacity of the second node includes its worst-case bandwidth is missing from Zendle. However, Lee discloses in column 2, lines 8-10, a prior art system that uses worst-case estimates to estimate subnetwork metrics. It would have been obvious to one skilled in the art at the time of the invention to include worst-case bandwidth in the capacities of the subnetworks of Zendle. The motivation would be to be able to handle whatever situations may arise in the network.

Regarding claim 10, different nodes in each of the first and third subnetworks are connected to different nodes in the second subnetwork is missing from Zendle. However, Lee discloses in the abstract a plurality of interconnected subnetworks, and in column 4, lines 27-28, that each subnetwork has a set of exposed nodes connected to various nodes in other subnetworks. Also, the claimed topology would integrate all three subnetworks into a mesh topology, such as is disclosed in column 4 lines 54. It would have been obvious to one skilled in the art at the time of the invention to connect the nodes in the first and third subnetworks to different nodes in the second. The motivation would be to have a fully connected overall mesh topology.

Regarding claim 17, each of the nodes in the first subnetwork are connected to a different node in the second subnetwork is missing from Zendle. However, Lee

discloses in the abstract a plurality of interconnected subnetworks, and in column 4, lines 27-28, that each subnetwork has a set of exposed nodes connected to various nodes in other subnetworks. Also, the claimed topology would integrate both subnetworks into a mesh topology, such as is disclosed in column 4 lines 54. It would have been obvious to one skilled in the art at the time of the invention to connect the nodes in the first and third subnetworks to different nodes in the second. The motivation would be to have a fully connected overall mesh topology.

Regarding claim 32, a connection for connection to a scale node, and wherein a capacity of the second connection is equal to or greater than a sum of capacities for the first plurality of connection ports is disclosed in Zendle, figure 7, elements 706 and 704-n (the nodes in the 706 subnetworks are connected to the 704 scale nodes, which have higher capacity than the 704 nodes). A first plurality of connection ports for connection in a mesh topology is missing from Zendle. However, subnetworks being connected in a fully-mesh topology is disclosed in Lee, column 4, line 54. It would have been obvious to one skilled in the art at the time of the invention to have the subnetwork in Zendle form a mesh topology as in Lee. The motivation would be to have the subnetwork fully connected.

Regarding claim 33, each node includes a scale connection for connection to a scale node, and wherein a capacity of the second connection is equal to or greater than a sum of capacities for the first plurality of connection ports is disclosed in Zendle, figure 7, elements 706 and 704-n (the nodes in the 706 subnetworks are connected to the 704 scale nodes, which have higher capacity than the 704 nodes). A first plurality of nodes

interconnected in a mesh topology is missing from Zendle. However, subnetworks being connected in a fully-mesh topology is disclosed in Lee, column 4, line 54. It would have been obvious to one skilled in the art at the time of the invention to have the subnetwork in Zendle form a mesh topology as in Lee. The motivation would be to have the subnetwork fully connected.

4. Claims 11-12 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zendle in view of DeMartino.

Regarding claim 11, at least a third subnetwork having a plurality of nodes interconnected by a fourth plurality of links, further including a fifth plurality of links between nodes in the second subnetwork and in the third subnetwork is disclosed in Zendle, figure 7, elements 706 (there are a plurality of networks connected to the second network, which is elements 704-n). Nodes in the third subnetwork have a third capacity higher than the second capacity is missing from Zendle. However, DeMartino discloses in figure 4 various interconnected subnetworks, eventually connected to an optical backbone network, which would have more capacity than any subnetworks connected to it. It would have been obvious to one skilled in the art at the time of then invention to connect the second network of Zendle to an overall backbone network. The motivation would be to allow the network to communicate with the world.

Regarding claim 12, the first and third capacities are equal is disclosed in Zendle, figure 7, elements 706 (the plurality of subnetworks are all approximately equal).

Regarding claim 27, means interconnecting a second scale and the first scale is missing from Zendle. However, DeMartino discloses in figure 4 various interconnected

subnetworks, eventually connected to an overall optical backbone network, which is analogous to a second scale of nodes. It would have been obvious to one skilled in the art at the time of then invention to connect the first scale of Zendle to another scale of nodes. The motivation would be to allow the network to communicate with the world at large.

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zendle in view of He-Duong.

Regarding claim 16, the capacity and topology of the interconnections between the subnetworks define a network having a monotonic performance characteristic is missing from Zendle. However, He-Duong discloses in column 19, lines 3-4, sorting in an ATM network switch being done monotonically. It would have been obvious to one skilled in the art at the time of the invention to have a monotonic performance characteristic for the network. The motivation would be to use a known type of equation.

6. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zendle in view of McMillen.

Regarding claim 22, means for balancing the first area of nodes and the first scale of nodes is missing from Zendle. However, McMillen discloses in column 55, lines 48-51, load-balancing means in a network. It would have been obvious to one skilled in the art at the time of the invention to balance the nodes. The motivation would be to have the network run in a smooth, balanced fashion.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cynthia L Davis whose telephone number is (571) 272-3117. The examiner can normally be reached on 8:30 to 6, Monday to Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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